Gay People are Smoking

Study by Philippe L. De Coster, B.Th.,D.D.

Nickname: Hagur

Young people who identify as lesbian, gay or bisexual are twice as likely to have smoked than their heterosexual peers, according to new research published by the British Medical Journal

If anyone has a reason to smoke, gay people do. It seems that gay people have higher rates of PTSD, depression, and anxiety—all of which lead to the urge for a cigarette. And a tragically high number of gay people are told that they are diseased, aberrant, intrinsically disordered throughout their youths, fostering a self-loathing that can lead, if not to suicide, than to nearly suicidal activities.

It's dismaying but not surprising, then, to learn from a new study that a startling 33 percent of LGBTQ people smoke—a rate 68 percent higher than the general European and U.S. population. Even worse, the LGBTQ community spends an astonishing of money every year on tobacco, about 65 times the amount of money spent on all LGBTQ lobbying. And the numbers carry a dark footnote: HIV-positive smokers lose an average of 12.5 years off their lives, compared with 5.1 years lost for HIV-positive nonsmokers.

A decade ago, numbers like these would be utterly unremarkable. And even in 2014 (last year), they've generally been received with little more than a yawn. Smoking, after all, is one of the less harmful ways troubled gay people can destroy their bodies in a vain attempt to exorcise their demons. A pack of cigarettes is certainly less toxic than meth, binge drinking, and frequent, anonymous unprotected sex—all nostrums with which some suffering gays attempt to treat their mental wounds.

But tobacco isn't all that much better. After so many years of over-earnest PSAs, it's easy to write off the risk of cigarettes. The fact remains, however, that smoking—even occasional social smoking—is one of the most toxic, destructive, and ridiculously harmful things you can do to your body. One out of every five human deaths is due to smoking, and smokers die an average of 10 years earlier than nonsmokers. A third of all cancer deaths every year are linked directly to smoking, while a full 85 percent of lung cancers throughout the world are a result of tobacco use. And smoking destroys the body in myriad subtle but horrifying ways: Hindering kidney function, contributing toward heart disease and stroke, ruining virtually every organ in the human body.

At this stage, of course, all Europeans and Americans know that cigarettes kill you, LGBTQ people included—and in a sense, that's part of the problem. We can wave CDC morbidity studies around all day, but a gay person struggling with self-loathing won't particularly care. In fact, in a perverse way, the hazard is the draw for gay kids who see no reason to continue living. Merely reminding the LGBTQ community that smoking is awful will do nothing to curb it. The root of the problem—self-loathing cultivated by years of being told you're a disordered monster—goes too deep to be resolved by scolding PSAs, tempting as that quick fix might seem.

Instead, the solution to the LGBTQ smoking crisis is, essentially, to do nothing—nothing more, that is, than we're already doing to promote gay rights across the country. Every time a states' citizens give the thumbs-up to gay marriage, every time a federal judge grants basic equality to gay people, a new generation of LGBTQ youth becomes a little less prone to self-hatred and self-destruction. Many politicians' insist that gay people deserve equal dignity probably did more to curb smoking among gay youth than any anti-smoking ad ever could. As gay people become more accepted in mainstream life, so, too, will gay teens feel less tempted to exorcise their agony with risky behavior like smoking. But until gay people are truly welcomed in all facets of society, gay kids will keep turning to those vices that, in the midst of such overwhelming bleakness, provide a fleeting (and ruinous) moment of relief. It seems that smoking also belongs to sex.

Whatever is said or thought about, everybody should be free to smoke cigarettes, cigars and a pipe. Smoking maybe an enemy, but I think this has been understood quite well: it has been remembered thousands of times these years and days, in large and small ways; in fact, something even higher and more sublime happens every once and a while – we learn to despise smoking when we love and precisely when we love it the most.

But, all of this is unconscious, noiseless, and possessing that shamelessness and concealing goodness which forbids the mouth from using any solemn words or formulas about our smoking. Morality as posturing of the self-righteous those who know always best about the taste of the gays and others, offends our taste these days. No puritan litany, moral homily, or petty bourgeois respectability wants to resonate with the music in our gay conscience and the dance of our sensual minds. Watch out for people who put a high value on being credited with moral tact and with subtlety in making moral distinctions. All religious morality belong today to the far past and for good. Young people are mostly smoking Marlboro, why!

Ingredients in different Marlboro varieties

(Sales on a World bases)

Marlboro (blue pack) King-Size Hard Pack 25's

Product Weight: 0.915 g
Tobacco Weight: 0.648 g

Ingredients listed in descending order by weight

tobacco
water
sugars (sucrose and/or invert sugar)
propylene glycol
glycerol
natural & artificial flavourings

Notes:

- Refer to the “Composite List of Tobacco Ingredients” accompanying this report for the quantities not exceeded and function of the listed ingredients.
- Flavourings that make up each brand’s unique flavour characteristics are grouped as “natural” and/or “artificial” flavours. Each flavouring grouped under this heading is disclosed the "Composite List of Tobacco Ingredients" accompanying this report
- Details of the non-tobacco ingredients can be found in the "Composite List of Non-Tobacco Ingredients" accompanying this report.
- Processing aids and preservatives that are not significantly present in, and do not functionally affect, the finished product are grouped as "processing aids" and/or "preservatives". Each processing aid and preservative grouped under this heading is disclosed in the "Composite List of Tobacco Ingredients" accompanying this report.

Marlboro (red pack) King-Size Hard Pack 20's

Product Weight: 0.919 g
Tobacco Weight: 0.724 g

Ingredients listed in descending order by weight

tobacco
water
sugars (sucrose and/or invert sugar)
propylene glycol
glycerol
licorice extract
guar gum
carob bean and/or extract
cocoa and cocoa products
natural & artificial flavourings

Notes:

- Refer to the “Composite List of Tobacco Ingredients” accompanying this report for the quantities not exceeded and function of the listed ingredients.
- Flavourings that make up each brand’s unique flavour characteristics are grouped as “natural” and/or “artificial” flavours. Each flavouring grouped under

this heading is disclosed the "Composite List of Tobacco Ingredients" accompanying this report

- Details of the non-tobacco ingredients can be found in the "Composite List of Non-Tobacco Ingredients" accompanying this report.
- Processing aids and preservatives that are not significantly present in, and do not functionally affect, the finished product are grouped as "processing aids" and/or "preservatives". Each processing aid and preservative grouped under this heading is disclosed in the "Composite List of Tobacco Ingredients" accompanying this report.

Marlboro (red pack) King-Size Hard Pack 25's

Product Weight: 0.919 g
Tobacco Weight: 0.724 g

Ingredients listed in descending order by weight

tobacco
water
sugars (sucrose and/or invert sugar)
propylene glycol
glycerol
licorice extract
guar gum
carob bean and/or extract
cocoa and cocoa products
natural & artificial flavourings

Notes:

- Refer to the “Composite List of Tobacco Ingredients” accompanying this report for the quantities not exceeded and function of the listed ingredients.
- Flavourings that make up each brand’s unique flavour characteristics are grouped as “natural” and/or “artificial” flavours. Each flavouring grouped under this heading is disclosed the "Composite List of Tobacco Ingredients" accompanying this report
- Details of the non-tobacco ingredients can be found in the "Composite List of Non-Tobacco Ingredients" accompanying this report.
- Processing aids and preservatives that are not significantly present in, and do not functionally affect, the finished product are grouped as "processing aids" and/or "preservatives". Each processing aid and preservative grouped under this

heading is disclosed in the "Composite List of Tobacco Ingredients" accompanying this report.

Marlboro (silver pack) King-Size Hard Pack 25's

Product Weight: 0.854 g
Tobacco Weight: 0.613 g

Ingredients listed in descending order by weight

tobacco
water
propylene glycol
sugars (sucrose and/or invert sugar)
glycerol
guar gum
carob bean and/or extract
natural & artificial flavourings
cocoa and cocoa products

Notes:

- Refer to the “Composite List of Tobacco Ingredients” accompanying this report for the quantities not exceeded and function of the listed ingredients.
- Flavourings that make up each brand’s unique flavour characteristics are grouped as “natural” and/or “artificial” flavours. Each flavouring grouped under this heading is disclosed the "Composite List of Tobacco Ingredients" accompanying this report
- Details of the non-tobacco ingredients can be found in the "Composite List of Non-Tobacco Ingredients" accompanying this report.
- Processing aids and preservatives that are not significantly present in, and do not functionally affect, the finished product are grouped as "processing aids" and/or "preservatives". Each processing aid and preservative grouped under this heading is disclosed in the "Composite List of Tobacco Ingredients" accompanying this report.

Marlboro Fresh Chill Menthol King-Size Hard Pack 20's

Product Weight: 0.880 g
Tobacco Weight: 0.648 g

Ingredients listed in descending order by weight

tobacco
water
sugars (sucrose and/or invert sugar)
propylene glycol
glycerol
l-menthol
licorice extract
carob bean and/or extract
cocoa and cocoa products
natural & artificial flavourings

Notes:

- Refer to the “Composite List of Tobacco Ingredients” accompanying this report for the quantities not exceeded and function of the listed ingredients.
- Flavourings that make up each brand’s unique flavour characteristics are grouped as “natural” and/or “artificial” flavours. Each flavouring grouped under this heading is disclosed the "Composite List of Tobacco Ingredients" accompanying this report
- Details of the non-tobacco ingredients can be found in the "Composite List of Non-Tobacco Ingredients" accompanying this report.
- Processing aids and preservatives that are not significantly present in, and do not functionally affect, the finished product are grouped as "processing aids" and/or "preservatives". Each processing aid and preservative grouped under this heading is disclosed in the "Composite List of Tobacco Ingredients" accompanying this report.

Marlboro Gold Advance King-Size Hard Pack 20's

Product Weight: 0.875 g
Tobacco Weight: 0.644 g

Ingredients listed in descending order by weight

tobacco
water
propylene glycol
sugars (sucrose and/or invert sugar)
glycerol
natural & artificial flavourings

Notes:

- Refer to the “Composite List of Tobacco Ingredients” accompanying this report for the quantities not exceeded and function of the listed ingredients.
- Flavourings that make up each brand’s unique flavour characteristics are grouped as “natural” and/or “artificial” flavours. Each flavouring grouped under this heading is disclosed the "Composite List of Tobacco Ingredients" accompanying this report
- Details of the non-tobacco ingredients can be found in the "Composite List of Non-Tobacco Ingredients" accompanying this report.
- Processing aids and preservatives that are not significantly present in, and do not functionally affect, the finished product are grouped as "processing aids" and/or "preservatives". Each processing aid and preservative grouped under this heading is disclosed in the "Composite List of Tobacco Ingredients" accompanying this report.

Marlboro Gold Advance King-Size Hard Pack 25's

Product Weight: 0.875 g
Tobacco Weight: 0.644 g

Ingredients listed in descending order by weight

tobacco
water

propylene glycol
sugars (sucrose and/or invert sugar)
glycerol
natural & artificial flavourings

Notes:

- Refer to the “Composite List of Tobacco Ingredients” accompanying this report for the quantities not exceeded and function of the listed ingredients.
- Flavourings that make up each brand’s unique flavour characteristics are grouped as “natural” and/or “artificial” flavours. Each flavouring grouped under this heading is disclosed the "Composite List of Tobacco Ingredients" accompanying this report
- Details of the non-tobacco ingredients can be found in the "Composite List of Non-Tobacco Ingredients" accompanying this report.
- Processing aids and preservatives that are not significantly present in, and do not functionally affect, the finished product are grouped as "processing aids" and/or "preservatives". Each processing aid and preservative grouped under this heading is disclosed in the "Composite List of Tobacco Ingredients" accompanying this report.

Marlboro Gold Original King-Size Hard Pack 20's

Product Weight: 0.896 g
Tobacco Weight: 0.655 g

Ingredients listed in descending order by weight

tobacco
water
sugars (sucrose and/or invert sugar)
propylene glycol
glycerol
licorice extract
guar gum
carob bean and/or extract
cocoa and cocoa products
natural & artificial flavourings

Notes:

- Refer to the “Composite List of Tobacco Ingredients” accompanying this report for the quantities not exceeded and function of the listed ingredients.
- Flavourings that make up each brand’s unique flavour characteristics are grouped as “natural” and/or “artificial” flavours. Each flavouring grouped under this heading is disclosed the "Composite List of Tobacco Ingredients" accompanying this report
- Details of the non-tobacco ingredients can be found in the "Composite List of Non-Tobacco Ingredients" accompanying this report.
- Processing aids and preservatives that are not significantly present in, and do not functionally affect, the finished product are grouped as "processing aids" and/or "preservatives". Each processing aid and preservative grouped under this heading is disclosed in the "Composite List of Tobacco Ingredients" accompanying this report.

Marlboro Gold Original King-Size Hard Pack 25's

Product Weight: 0.896 g
Tobacco Weight: 0.655 g

Ingredients listed in descending order by weight

tobacco
water
sugars (sucrose and/or invert sugar)
propylene glycol
glycerol
licorice extract
guar gum
carob bean and/or extract
cocoa and cocoa products
natural & artificial flavourings

Notes:

- Refer to the “Composite List of Tobacco Ingredients” accompanying this report for the quantities not exceeded and function of the listed ingredients.
- Flavourings that make up each brand’s unique flavour characteristics are grouped as “natural” and/or “artificial” flavours. Each flavouring grouped under

this heading is disclosed the "Composite List of Tobacco Ingredients" accompanying this report

- Details of the non-tobacco ingredients can be found in the "Composite List of Non-Tobacco Ingredients" accompanying this report.
- Processing aids and preservatives that are not significantly present in, and do not functionally affect, the finished product are grouped as "processing aids" and/or "preservatives". Each processing aid and preservative grouped under this heading is disclosed in the "Composite List of Tobacco Ingredients" accompanying this report.

Marlboro Ice Blast Menthol King-Size Hard Pack 20's

Product Weight: 0.876 g
Tobacco Weight: 0.579 g

Ingredients listed in descending order by weight

tobacco
water
sugars (sucrose and/or invert sugar)
propylene glycol
glycerol
l-menthol
licorice extract
carob bean and/or extract
cocoa and cocoa products
natural & artificial flavourings

Notes:

- Refer to the “Composite List of Tobacco Ingredients” accompanying this report for the quantities not exceeded and function of the listed ingredients.
- Flavourings that make up each brand’s unique flavour characteristics are grouped as “natural” and/or “artificial” flavours. Each flavouring grouped under this heading is disclosed the "Composite List of Tobacco Ingredients" accompanying this report
- Details of the non-tobacco ingredients can be found in the "Composite List of Non-Tobacco Ingredients" accompanying this report.
- Processing aids and preservatives that are not significantly present in, and do not functionally affect, the finished product are grouped as "processing aids" and/or "preservatives". Each processing aid and preservative grouped under this

heading is disclosed in the "Composite List of Tobacco Ingredients" accompanying this report.

Marlboro Ice Chill Menthol King-Size Hard Pack 20's

Product Weight: 0.863 g
Tobacco Weight: 0.634 g

Ingredients listed in descending order by weight

tobacco
water
propylene glycol
l-menthol
sugars (sucrose and/or invert sugar)
glycerol
natural & artificial flavourings

Notes:

- Refer to the “Composite List of Tobacco Ingredients” accompanying this report for the quantities not exceeded and function of the listed ingredients.
- Flavourings that make up each brand’s unique flavour characteristics are grouped as “natural” and/or “artificial” flavours. Each flavouring grouped under this heading is disclosed the "Composite List of Tobacco Ingredients" accompanying this report
- Details of the non-tobacco ingredients can be found in the "Composite List of Non-Tobacco Ingredients" accompanying this report.
- Processing aids and preservatives that are not significantly present in, and do not functionally affect, the finished product are grouped as "processing aids" and/or "preservatives". Each processing aid and preservative grouped under this heading is disclosed in the "Composite List of Tobacco Ingredients" accompanying this report.

Marlboro Menthol King-Size Hard Pack 20's

Product Weight: 0.870 g
Tobacco Weight: 0.619 g

Ingredients listed in descending order by weight

tobacco
water
sugars (sucrose and/or invert sugar)
propylene glycol
glycerol
l-menthol
licorice extract
guar gum
carob bean and/or extract
cocoa and cocoa products
natural & artificial flavourings

Notes:

- Refer to the “Composite List of Tobacco Ingredients” accompanying this report for the quantities not exceeded and function of the listed ingredients.
- Flavourings that make up each brand’s unique flavour characteristics are grouped as “natural” and/or “artificial” flavours. Each flavouring grouped under this heading is disclosed the "Composite List of Tobacco Ingredients" accompanying this report
- Details of the non-tobacco ingredients can be found in the "Composite List of Non-Tobacco Ingredients" accompanying this report.
- Processing aids and preservatives that are not significantly present in, and do not functionally affect, the finished product are grouped as "processing aids" and/or "preservatives". Each processing aid and preservative grouped under this heading is disclosed in the "Composite List of Tobacco Ingredients" accompanying this report.

Marlboro Menthol King-Size Hard Pack 25's

Product Weight: 0.870 g
Tobacco Weight: 0.619 g
Ingredients listed in descending order by weight

tobacco
water
sugars (sucrose and/or invert sugar)
propylene glycol
glycerol
l-menthol
licorice extract
guar gum
carob bean and/or extract
cocoa and cocoa products
natural & artificial flavourings

Notes:

- Refer to the “Composite List of Tobacco Ingredients” accompanying this report for the quantities not exceeded and function of the listed ingredients.
- Flavourings that make up each brand’s unique flavour characteristics are grouped as “natural” and/or “artificial” flavours. Each flavouring grouped under this heading is disclosed the "Composite List of Tobacco Ingredients" accompanying this report
- Details of the non-tobacco ingredients can be found in the "Composite List of Non-Tobacco Ingredients" accompanying this report.
- Processing aids and preservatives that are not significantly present in, and do not functionally affect, the finished product are grouped as "processing aids" and/or "preservatives". Each processing aid and preservative grouped under this heading is disclosed in the "Composite List of Tobacco Ingredients" accompanying this report.

Marlboro Silver Fine Scent King-Size Hard Pack 25's

Product Weight: 0.895 g
Tobacco Weight: 0.644 g

Ingredients listed in descending order by weight

tobacco
water
propylene glycol
sugars (sucrose and/or invert sugar)
glycerol
natural & artificial flavourings

Notes:

- Refer to the “Composite List of Tobacco Ingredients” accompanying this report for the quantities not exceeded and function of the listed ingredients.
- Flavourings that make up each brand’s unique flavour characteristics are grouped as “natural” and/or “artificial” flavours. Each flavouring grouped under this heading is disclosed the "Composite List of Tobacco Ingredients" accompanying this report
- Details of the non-tobacco ingredients can be found in the "Composite List of Non-Tobacco Ingredients" accompanying this report.
- Processing aids and preservatives that are not significantly present in, and do not functionally affect, the finished product are grouped as "processing aids" and/or "preservatives". Each processing aid and preservative grouped under this heading is disclosed in the "Composite List of Tobacco Ingredients" accompanying this report.

Nicotine

Nicotine is a chemical compound that is present in tobacco. When tobacco is smoked, nicotine is absorbed through the wall lining of the small air sacs in the lungs. When sniffed or chewed, it is absorbed through the mucous membranes of the nose or mouth. Nicotine can also be absorbed through the skin.

Regardless of how nicotine is absorbed, it enters the bloodstream where it circulates throughout the body and travels to the brain where it crosses the blood-brain barrier. Once in the brain, it binds to and activates receptors called the cholinergic receptors.

Effects

These cholinergic receptors are present in the brain as well as in other areas such as the muscles, heart, adrenal glands and other vital organs. Normally, these

receptors are activated by the neurotransmitter acetylcholine which is produced at nerve endings in the brain and in the nerves of the peripheral nervous system. The actions of acetylcholine help to maintain healthy respiration, heart function, muscle movement and cognitive functions such as memory.

Since nicotine has a similar structure to acetylcholine, it can activate the cholinergic receptors. However, unlike acetylcholine, nicotine enters the brain and disrupts its normal functioning. Regular smoking leads to a change in the number of cholinergic receptors and to changes in their sensitivity to nicotine. This can lead to the development of nicotine tolerance.

Once this happens, the affected person needs to use nicotine regularly to maintain normal brain function. If the level of nicotine falls, the smoker may experience unpleasant withdrawal symptoms that lead to them "topping up" their nicotine levels by smoking again. Because of its highly addictive properties, smoking is considered by the American Heart Association to be one of the hardest addictions to break.

Chemistry

Nicotine is an alkaloid that is found in certain plants. It makes up 0.6 to 3.0% of the dry weight of tobacco. Nicotine is found in tobacco plants (Nicotiana tabacum) where it is synthesized in the roots and accumulates in the leaves. It is an oily liquid that is miscible with water in its base form. Nitrogenous forms of nicotine form salts with acids that are soluble in water.

Nicotine is one of more than 4,000 chemicals found in the smoke from tobacco products; it is the primary component that acts on the brain. Smokeless tobacco products (for example, snuff and chewing tobacco) also contain many toxins as well as high levels of nicotine. Nicotine is a naturally occurring colorless liquid that turns brown when burned and takes on the odor of tobacco when exposed to air. There are many species of tobacco plants, the tabacum species serving as the major source of today's tobacco products. Extensive study shows it to have a number of complex and sometimes unpredictable effects on the brain and the body.

Nicotine is absorbed through the skin and mucosal lining of the nose and mouth or in the lungs (through inhalation). Nicotine can reach peak levels in the bloodstream and brain rapidly, depending on how it is taken. Cigarette smoking results in nicotine reaching the brain within just 10 seconds of inhalation. However, cigar and pipe smokers, on the other hand, typically do not inhale the

smoke, so nicotine is absorbed more slowly through the mucosal membranes of their mouths (as is nicotine from smokeless tobacco).

Nicotine is addictive, which is why most smokers tend to do it regularly. Addiction is characterized by compulsive drug seeking and use, even at the risk of negative health consequences. Most smokers know that tobacco is harmful and express a desire to decrease or end use of it, with nearly 35 million people seriously attempting to quit each year. Unfortunately, most relapse within just a few days, and less than 7 percent of those who try to quit on their own achieve more than a year of abstinence.

Besides nicotine's addictive properties, other factors to consider include its easy availability, the small number of legal and social consequences of tobacco use and the sophisticated marketing and advertising methods of tobacco companies. These combined with nicotine's addictive properties often lead to first use and, ultimately, addiction.

Recent research has shown how nicotine acts on the brain. Nicotine activates the circuitry that regulates feelings of pleasure, the so-called reward pathways. Research has shown that nicotine increases the levels of dopamine (a key brain chemical involved in mediating the desire to consume drugs) in the reward circuits. Nicotine's pharmacokinetic properties have been found to enhance its abuse potential. Cigarette smoking produces a rapid distribution of nicotine to the brain, with drug levels peaking within 10 seconds of inhalation. The acute effects of nicotine dissipate within a few minutes, causing the need to continue repeated intake throughout the day.

A cigarette is a very efficient and highly engineered drug-delivery system. A smoker can get nicotine to the brain very rapidly with every inhalation. A typical smoker will take 10 puffs on a lit cigarette over a period of 5 minutes. Thus, a person who smokes about one-and-a-half packs (30 cigarettes) each day gets 300 nicotine hits to the brain daily. These factors contribute considerably to nicotine's highly addictive nature.

Using advanced neuroimaging technology, research is beginning to show that nicotine may not be the only psychoactive ingredient in tobacco. Scientists can see the dramatic effect of cigarette smoking on the brain and are finding a marked decrease in the levels of monoamineoxidase (MAO), an enzyme responsible for breaking down dopamine. The change in MAO must be caused by some tobacco smoke ingredient other than nicotine, since nicotine itself does not dramatically alter MAO levels. The decrease in two forms of MAO, A and

B, results in higher dopamine levels. The need to sustain the high dopamine levels results in the desire for repeated drug use.

How does nicotine deliver its effect?

Nicotine acts as both a stimulant and a sedative. Immediately after exposure to nicotine, there is a "kick" caused in part by the drug's stimulation of the adrenal glands and resulting discharge of epinephrine (adrenaline). The rush of adrenaline stimulates the body, causing a sudden release of glucose as well as an increase in blood pressure, heart rate and respiration. Nicotine also suppresses insulin output from the pancreas, causing smokers to be slightly hyperglycemic. In addition, nicotine indirectly causes a release of dopamine in the brain regions that control pleasure and motivation. This reaction is similar to that seen with other abused drugs—such as cocaine and heroin—and is thought to underlie the pleasurable sensations many smokers experience. In contrast, nicotine can also exert a sedative effect, depending on the level of the smoker's nervous system arousal and the dose of nicotine taken.

Repeated exposure to nicotine results in the development of tolerance, the condition in which higher doses of a drug are required to produce the same initial effect. Nicotine is metabolized fairly rapidly, disappearing from the body in a few hours. Therefore some tolerance is lost overnight, and smokers often report that the first cigarettes of the day are the strongest and/or the "best." Tolerance progresses as the day develops, and later cigarettes have less effect.

Cessation of nicotine good to know

Cessation of nicotine use is followed by a withdrawal period that may last a month or more and includes symptoms that can quickly drive people back to tobacco use. Nicotine withdrawal symptoms may begin within a few hours after the last cigarette, and include irritability, sleep disturbances, craving, cognitive and attentional deficits and increased appetite. Symptoms generally peak within the first few days and may subside within a few weeks, though for some people, they may persist for months or longer.

An important and poorly understood component of the nicotine withdrawal syndrome is craving, an urge for nicotine that has been described as a major obstacle to successful abstinence and may persist for 6 months or longer. While the withdrawal syndrome is related to the pharmacological effects of nicotine, the severity of withdrawal symptoms can also be affected by psychological experiences. For some people, the feel, smell and sight of a cigarette and the ritual of obtaining, handling, lighting and smoking it are all associated with the

pleasurable effects of smoking and can make withdrawal or craving worse. While nicotine gum and patches may alleviate the pharmacological aspects of withdrawal, cravings often persist.

What are the medical consequences?

The medical consequences of nicotine exposure result from effects of both the nicotine itself and how it is taken. Tobacco use accounts for one-third of all cancers. Foremost among the cancers caused by tobacco is lung cancer-the number one cancer killer of both men and women. In 90 percent of all lung cancer cases, there is a link to cigarette smoking.

Some other medical consequences:

• lung diseases such as chronic bronchitis and emphysema• exacerbation of asthma symptoms• Associated with cancers of mouth, kidney, esophagus, pharynx, larynx, stomach, pancreas, cervix, ureter and bladder• Risk of heart disease including stroke, vascular disease, heart attack, and aneurysm.• Passive or secondary smoke increases risk for many diseases including lung cancer and cardiovascular disease in nonsmokers as well as increasing the severity of asthma in children and incidence of sudden infant death syndrome• Female smokers tend to have earlier menopause• Female smokers who take oral contraceptives - more prone to cardiovascular and cerebrovascular diseases• Pregnant smokers - increased risk of stillborn, premature or low-birth weight infants• Children of women who smoked while pregnant - increased risk for developing conduct disorders

Comments on the Used Ingredients

Carob bean

Carob bean

Carob contains alanine, alpha-aminopimelic-acid, amino acids, arginine, ash, aspartic acid, benzoic acid, butyric acid, capronic acid, carubin, catechin tannin, cellulose, ceratoniase, ceratose, chiro-inositol, concanavalin-A, fat, formic acid, fructose, D-galactose, gallic acid, beta-D1,6-DI-O-galloylglucose, beta-D-glucogallin, glucose, glutamic acid, glycine, gum, hemicellulose, histidine, hydroxyproline, invert sugars, isobutyric acid, isoleucine, leucine, leucodelphinidin, lignin, lysine, D-mannose, methionine, mucilage, myoinositol, pectin, pentosane, phenylalanine, pinitol, primverose, proline, protein, saccarose, saponin, serine, starch, sucrose, sugars, tannin, threonine, tocopherol, tyrosine, valine, water, xylose. The pods are rich in antioxidant polyphenols (19.2%), as is chocolate.

Carob is native to the eastern Mediterranean, probably the Middle East, where it has been in cultivation for at least 4000 years. The plant was well known to the ancient Greeks, who planted seeds of this plant in Greece and Italy.

This plant is also called St. John's bread or locust bean because the pods were once thought to have been the "locusts" that were eaten by John the Baptist in the Wilderness.

That story was apparently wrong--he ate migratory locust. Seeds were used to weight gold, hence the word "carat." Mohammed's army ate kharoub , and Arabs planted the crop in northern Africa and Spain (Moors), along with citrus (Citrus) and olives (Olea).

Spaniards carried carob to Mexico and South America, and the British took carob to South Africa, India, and Australia.

Records show that carob was intentionally introduced into the United States in 1854, and the first seedlings were apparently planted in California in 1873. For commercial production cultivars with the finest quality fruits are bud grafted on common stock.

Carob grows well anywhere that citrus is grown, and it prefers dry climates that receive more than 30 centimetres of rainfall--ideal mediterranean-type climates.

The fruit of carob is a pod, technically a legume 15 to 30 centimetres in length and fairly thick and broad.

Pods are borne on the old stems of the plant on short flower stalks. Interestingly, most carob trees are monoecious, with individual male and female flowers.

The dark-brown pods are not only edible, but also rich in sucrose (almost 40% plus other sugars) and protein (up to 8%).

Moreover, the pod has vitamin A, B vitamins, and several important minerals. They can be eaten directly by livestock, but we know carob mostly because the pods are ground into flour that is a cocoa substitute.

Although this product has a slightly different taste than chocolate, it has only one-third the calories (total 1595 calories per pound), is virtually fat-free (chocolate is half fat), is rich in pectin, is nonallergenic, has abundant protein, and has no oxalic acid, which interferes with absorption of calcium.

Consequently, carob flour is widely used in health foods for chocolate-like flavouring.

A very fine polysaccharide gum--mucilaginous, odourless, tasteless, and colourless--can also be obtained from the pod and is now used in many products.

There are also several putative medicinal uses of the plant, and singers formerly chewed the pod husks in the belief that this clears the throat and voice.

Most carob used in this country comes from the Mediterranean Region, especially Sicily, Cyprus, Malta, Spain, southern Sardinia, and Italy along the Adriatic Sea.

Carob can be produced in California, and was grown for a while in the Southland, but this has not been economically successful because the land is too valuable to devote to this crop.

Its History and description

Carob is a species that has a long history of use by humans. Other names commonly used for Carob are St John's Bread and Locust. Legend has it that St John ate the pods of this species and hence the name.

Evidence of the use of Carob products by humans date back to ancient Greece and Egypt where the plant was used as a source of food.

The seeds from the Carob tree are extremely consistant in size and weight and are believed to have been the original guage for the 'carat' used by jewellers.

The species itself is ancient having survived the last ice age and flourished throughout the Mediterranean region since. It is well adapted to harsh climates and poor soils. Throughout its natural range the species has been widely cultivated because of its reliability as a food and fuel resource even during times of drought.

Description: The carob tree is a slow growing, medium sized evergreen tree originating in the eastern Mediterranean. It is a member of the Legume (Pea) family and is the only member of the genus Ceratonia. It is a xerophilous scleophphyllous species well suited to dry infertile environments. The species is trioecious with male, female and hermaphrodite inflorescences and is often multi stemmed growing up to 15 meters in height. The production of fruit begins around the age of 15 and continues for the life of the plant. The leaves are broad, dark green and offering substantial shade. The pods are long and leathery often growing up to 300mm long.

Carob Products

Carob is a highly versitile and useful tree to humans as there are a wide range of products derived from its fruits and timber. Primarily, foods for both human and

animal consumption are obtained from it's seeds, pulp and seed pods. Every part of the fruit is able to be consumed. However food is not the only product supplied by this species.

Carob in Food

The fruits of the Carob tree can be eaten either green or after having been processed. The Inside the seed pod there are up to 15 seeds surrounded by a saccharine pulp. The seeds are separated from the pulp and used to make locust bean gum sometimes known as Ceratonia or Carob bean gum.

This product is used in the manufacture of food stuffs, especially confectionary. It be used as a stabiliser, emulsifer, thickener or to to prevent sugar crystallisation. The other major food source derived from Carob is from the ground up pod itself, which forms a high protein powder that is an effective substitute for Cocoa powder.

Carob powder has a number of advantages over Cocoa powder and as such is often used to make what has come to be known as 'healthy chocolate' .

Carob powder is free of the allergenic and addictive effects of caffeine and theobromine present in Cocoa. It also contains less fat and more sugar than Cocoa. Cocoa has around 23% fat and 5% sugar while Carob contains apporoximately 7% fat and 42-48% sugar. Carob powder is often used as a substitute for cocoa at rates of up to 50%.

Used in this manner Carob has become a popular chocolate substitute used in a huge variety of confectionery products and drinks as well as a general sweetener. Carob is also used to make flour, molasses, alcohol and a substitute for coffee and eggs.

Carob and Health

Apart from the health benefits obtained by subsituting Carob for Cocoa and synthetic sweeteners in our diet, Carob also has excellent nutritional value. Along with up to 80% protien, it contains Magnesium, Calcium, Iron, Phosphorus, Potassium Manganese, Barium, Copper, Nickel and the vitamins A, B, B2, B3, and D. It also has medicinal uses including the treatment of coughs and diarrhoea.

Other Products and Uses

While food production is a very important characteristic of this species it is by no means the only benefit that can be obtained from growing Carob. These include: Tannin is obtained from the bark of Carob. Cosmetic face-packs are made from a flour made from the seed pods. The wood is hard and highly sought after by wood turners.

The wood is also used for fire wood

Provides shade and shelter and fodder for stock.

It is a nitrogen fixing species, providing improvements to soil fertility.

Growing Carob Trees

Grows well on low rainfall marginal land and is used for land amelioration.Prior to planting Carob, pre-soak the seed in warm water for approximately 24hrs. This species prefers sandy loams, medium loam and clay loam soils but can tolerate poorer soil conditions including rocky areas. Good drainage and full to semi-sun is also prefered if the species is to grow well. Carob will tolerate pH in the range 6.2 to 8.6.

This species is extremely drought resistant and irrigation is not required. It is also free of many pests and diseases, however it is susceptible to Texas Root Rot. After the plant has established itself it requires little maintenance except form pruning to encourage a single stem if required.

Pods

The pods are collected when brown, they are broken open and the hard seeds removed. The empty pods are then washed, dry roasted to inactivate enzymes that would break the product down and then milled like wheat to a very fine brown powder which is naturally sweet. This fine powder can be used the same as you would use cocoa and you will need less sugar.

To make the powder into its No Added Sugar chocolate form, it is basically mixed with skim milk powder, a vegetable oil, and soy lecithin. This makes the solid carob.

Carob is caffeine free, oxalic acid free and no theobromine, thenylthylamine and tyramine, these last 3 can trigger headaches and migraines in some people.

The seeds have a history of their own. The seed looks very much like a large watermelon seed. There about eight seeds to a pod. The gum they contain was used and is still used today by the Egyptians for binding their mummies. (Why change something that works?).

The Italians use the seed to make rosary beads. In Israel they have an annual Carob Festival. This seed was also used as a weight measure for gold and gems because seeds are very even in weight.

That use has come down through the centuries as the 'caret weight' (should be carob weight) and 0. 5 carob seeds equals one gram. A caret weight .02 of a gram.

The uses of the gum today are in cosmetics, pharmaceuticals, industrial oils and food thickening. It is called the locus bean gum. The timber of the carob tree makes beautiful furniture.

The Carob Tree

The carob tree is a Mediterranean plant. It has existed for over 4000 years.

It is a legume, evergreen and a beautiful shade tree and takes 20 years to reach its full height, which is 50ft (over 15mts) high and 50ft (over 15mts). wide, with a tap root to 125ft (38mts). In places like Egypt, where the water is mainly underground, that long tap root has allowed the carob trees to survive.

The surface root system never goes beyond the leaf canopy.

The tree takes up to 8 years to produce a crop of pods, 15 years to produce a commercial size crop, but by 20 years can produce up to a tonne in one season. It will continue to produce for up to 200 years and only the female trees in the wild, produce pods.

In commercial cultivation the trees are grafted male and female together so every tree produces a crop. Bees do the pollination as the masses of small cluster flowers offer large amounts of nectar as incentive.

Australia's Carob History!

Yes, Carob does have a history, even if it is only about 190 years old.

During the inland exploration of our vast country, camels and their drivers were imported to help and they brought the carobs with them. If you are fortunate

when visiting our inland areas you will see the odd large carob tree that has survived.

Soldier settlers returning from conflict in the Middle East were very impressed with the carob trees growing in such a harsh dry environment, that some of the men asked the Government of the time for carob tree seedlings, all began well. But due to the lack of written information on cultivation of the trees the project failed to proceed.

Carob trees are grown for shade in the streets of Burra, Adelaide and Murray Bridge.

Andrew Gebhardt will be producing Carob Syrup, which is used as a food flavouring. He also exports the seed for its gum.

In 1996 the plantation had 4500, 15 year old trees.

There are now 8500 trees as Andrew planted 4000 more in March 1997.

He also runs sheep and cattle.

There are four more plantations in Australia but as at 1997 they were only 5 years old.

So we will have to wait at least another 10 years for them to become productive. We are hopeful that at least 2 of these plantations will produce carob powder.

The tree produces green pods. When the pods turn brown they are harvested by a shaking machine and taken to the processing shed.

Currently all carob powder used in Australia has to be imported from Spain or Portugal. This we hope will change in the future.

Cigarettes

A **cigarette as you know** is a small cylinder of finely cut tobacco leaves rolled in thin paper for smoking. The cigarette is ignited at one end and allowed to smoulder; its smoke is inhaled from the other end, which is held in or to the mouth; in some cases a cigarette holder may be used as well. Most modern manufactured cigarettes (also called "ready rolls") are filtered and include reconstituted tobacco and other additives.

The term cigarette, as commonly used, refers to a tobacco cigarette but can apply to similar devices containing other herbs, such as cloves or cannabis. A cigarette is distinguished from a cigar by its smaller size, use of processed leaf, and paper wrapping, which is normally white, though other colors are also available. Cigars are typically composed entirely of whole-leaf tobacco.

Rates of cigarette smoking vary widely throughout the world, and have changed considerably over the course of history since cigarettes were first widely used in the mid-20th century. While rates of smoking have over time leveled off or declined in the developed world, they continue to rise in developing nations.

Cigarettes carry serious health risks, which are more prevalent than in other tobacco products. Nicotine, the primary psychoactive chemical in tobacco and therefore cigarettes, is addictive. About half of cigarette smokers die of tobacco-related disease and lose on average 14 years of life. Cigarette use by pregnant women has also been shown to cause birth defects, including low birth weight, fetal abnormalities, and premature birth. Second-hand smoke from cigarettes has been shown to be injurious to bystanders, which has led to legislation that has prohibited smoking in many workplaces and public areas. Cigarettes

produce an aerosol containing over 4,000 chemical compounds, including nicotine, carbon monoxide, acrogenic, and oxidant substances. Over 50 of these are carcinogens. Cigarettes are a frequent source of fires leading to loss of lives in private homes, which prompted the European Union and the United States to ban cigarettes that are not fire standard compliant by 2011.

Cocoa beans before roasting

Cocoa

Cocoa is the dried and partially fermented fatty seed of the cacao tree from which chocolate is made. "Cocoa" can often also refer to the drink commonly known as hot chocolate; cocoa powder, the dry powder made by grinding cocoa seeds and removing the cocoa butter from the dark, bitter cocoa solids; or it may refer to the combination of both cocoa powder and cocoa butter together.

A cacao pod has a rough leathery rind about 3 cm thick (this varies with the origin and variety of pod). It is filled with sweet, mucilaginous pulp called 'baba de cacao' in South America, enclosing 30 to 50 large almond-like seeds (beans) that are fairly soft and pinkish or purplish in colour.

Cocoa should not be confused with the coca plant which can be used to create cocaine.

Its history

The cacao tree is native to the Americas. It may have originated in the foothills of the Andes in the Amazon and Orinoco basins of South America where today, examples of wild cacao still can be found. However, it may have had a larger range in the past, evidence for which may be obscured because of its cultivation in these areas long before, as well as after, the Spanish arrived. It may have been introduced into Central America by the ancient Mayas, and cultivated in Mexico by the Olmecs, then by the Toltecs and later by the Aztecs. It was a common currency throughout Mesoamerica and the Caribbean before the Spanish conquest.

Cacao trees will grow in a limited geographical zone, of approximately 20 degrees to the north and south of the Equator. Nearly 70% of the world crop is grown in West Africa.

Cocoa was an important commodity in Pre-Columbian Mesoamerica. Spanish chroniclers of the conquest of Mexico by Hernán Cortés relate that when Montezuma II, emperor of the Aztecs, dined he took no other beverage than chocolate, served in a golden goblet and eaten with a golden spoon. Flavored with vanilla and spices, his chocolate was whipped into a froth that dissolved in the mouth. It is reported that Montezuma II may have consumed no fewer than 50 portions each day, and 200 more by the nobles of his court.

Chocolate was introduced to Europe by the Spaniards and became a popular beverage by the mid 1600s. They also introduced the cacao tree into the West Indies and the Philippines.

The cacao plant was first given its botanical name by Swedish natural scientist Carolus Linnaeus in his original classification of the plant kingdom, who called it *Theobroma* ("food of the gods") *cacao*.

Cocoa consumption and health benefits

Chocolate and cocoa contain a high level of flavonoids, specifically epicatechin, which may have beneficial cardiovascular effects on health. The ingestion of flavonol-rich cocoa is associated with acute elevation of circulating nitric oxide, enhanced flow-mediated vasodilation, and augmented microcirculation.

Prolonged intake of flavonol-rich cocoa has been linked to cardiovascular health benefits, though it should be noted that this refers to plain cocoa and dark chocolate. Milk chocolate's addition of whole milk reduces the overall cocoa content per ounce while increasing saturated fat levels, possibly negating some of cocoa's heart-healthy potential benefits. Nevertheless, studies have still found short term benefits in LDL cholesterol levels from dark chocolate consumption.

Hollenberg and colleagues of Harvard Medical School studied the effects of cocoa and flavanols on Panama's Kuna Indian population, who are heavy consumers of cocoa. The researchers found that the Kuna Indians living on the islands had significantly lower rates of heart disease and cancer compared to those on the mainland who do not drink cocoa as on the islands. It is believed that the improved blood flow after consumption of flavanol-rich cocoa may help to achieve health benefits in hearts and other organs. In particular, the benefits may extend to the brain and have important implications for learning and memory.

Foods rich in cocoa appear to reduce blood pressure but drinking green and black tea may not, according to an analysis of previously published research in the April 9, 2007 issue of Archives of Internal Medicine, one of the JAMA/Archives journals.

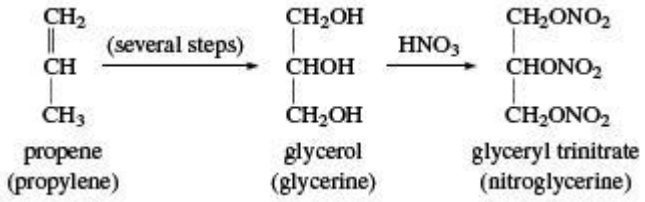
Glycerol

Glycerol, a clear, colourless, viscous, sweet-tasting liquid belonging to the alcohol family of organic compounds; molecular formula:

$$HOCH_2CHOHCH_2OH.$$

Until 1948 all glycerol was obtained as a by-product in making soaps from animal and vegetable fats and oils, but industrial syntheses based on propylene or sugar has accounted for an increasingly large percentage of production since that time. The term *glycerin* (or *glycerine*), introduced in 1811 by French chemist Michel-Eugène Chevreul, is ordinarily applied to commercial materials containing more than 95 percent glycerol. Though Chevreul gave glycerin its name, the substance was first isolated in 1783 by German Swedish chemist Carl Wilhelm Scheele, who described it as the “sweet principle of fat.”

Glycerol has numerous uses. It is a basic ingredient in the gums and resins used to make many modern protective coatings such as automotive enamels and exterior house paints. Glycerin reacted with nitric and sulfuric acid forms the explosive nitroglycerin (or nitroglycerine).



Glycerol is also a component of mono- and diglyceride emulsifiers, which are used as softening agents in baked goods, plasticizers in shortening, and stabilizers in ice cream. Its varied uses in the pharmaceutical and toilet goods fields include skin lotions, mouthwashes, cough medicines, drug solvents, serums, vaccines, and suppositories. Another significant use is as a protective medium for freezing red blood cells, sperm cells, eye corneas, and other living tissues. At one time, its largest single use was as automotive antifreeze; methanol and ethylene glycol have replaced it for this purpose.

Fats and oils are valued chiefly as sources of the carboxylic acids that are present, combined in the form of esters with glycerol. When the acids are set free from these compounds, glycerol remains as a solution in water and is purified by coagulating and settling extraneous matter, evaporating the water, and distilling.

Guar gum

Guar gum can best be described as a natural food thickener, similar to locust bean gum, cornstarch or tapioca flour. It is said to have significantly more thickening ability than cornstarch, at a fraction of the cost. This has made it a popular additive in products such as puddings and ice creams. Until recently, it

was also an ingredient in non-prescription diet pills designed to create a sense of fullness.

The guar plant, also known as a cluster plant, grows primarily in Pakistan and the northern regions of India. It thrives on the drought/monsoon cycles present in those areas. The plants are harvested after the monsoon season and the seeds are allowed to dry in the sun. The seeds are then manually or mechanically separated and processed into a flour or sold as split seeds. Guar gum is an important cash crop for the Indian and Pakistani economies.

While consumers may balk at such "exotic" ingredients as locust bean gum, carageenan and guar gum, the truth is many ice creams, puddings, and canned sauces would be fairly inedible without them. Guar gum is not just a thickening agent, but a binder and plasticizer as well. When untreated ice cream melts and refreezes, grainy ice crystals often form. This substance has the natural ability to bind with water molecules, preventing them from forming the unwanted crystals. Processed foods with creamy textures are primarily held together with binders such as this. Without a binder, the individual ingredients might separate into a watery mess.

The use of guar gum as an ingredient in non-prescription diet aids was officially banned in the early 1990s by the FDA. It would bind with liquids in the stomach and swell, causing a feeling of satisfying fullness. This swollen mass could also cause dangerous intestinal and duodenal blockages, however. Guar gum was declared unsafe and ineffective for use as a non-prescription diet aid, although it is still used in small amounts as a food thickener and binder.

Extract name licorice (read page 31)

Licorice extract

Liquorice, or **licorice**, (/ˈlɪkʰrɪʃ/ ***LIK-(ə-)rish*** or /ˈlɪkʰrɪs/ ***LIK-(ə-)ris)*** is the root of ***Glycyrrhiza glabra*** from which a sweet flavour can be extracted. The liquorice plant is a legume native to southern Europe, India, and parts of Asia. It is not botanically related to anise, star anise, or fennel, which are sources of similar flavouring compounds. The word liquorice / licorice is derived (via the Old French *licoresse*) from the Greek γλυκύρριζα (*glukurrhiza*), meaning "sweet root", from γλυκύς (*glukus*), "sweet" + ῥίζα (*rhiza*), "root", the name provided by Dioscorides. It has been traditionally known and used as medicine in Ayurveda for rejuvenation. It is called as *adhimadhuram* (அதிமதுரம்) in Tamil, *irattimadhuram* (ഇരട്ടിമധുരം) in Malayalam, *yastimadhu* (यष्टिमधु) in Sanskrit, *mulethi* (मुलेठी) in Hindi, *Vel Mee" (වැල් මී)in Sinhalese*, jethimadh *(જેઠીમધ) in Gujarati*, jyeshthamadh *(ज्येष्ठमध) in Marathi.*

Liquorice, which grows best in well-drained soils in deep valleys with full sun, is harvested in the autumn two to three years after planting. Countries producing liquorice include Iran, Afghanistan, the People's Republic of China, Pakistan, Iraq, Azerbaijan, Uzbekistan, Turkmenistan, and Turkey.

The world's leading manufacturer of liquorice products is M&F Worldwide, which manufactures more than 70% of the worldwide liquorice flavours sold to end users.

The ingredient in tobacco

Most liquorice is used as a flavouring agent for tobacco. For example, M&F Worldwide reported in 2011 that about 63% of its liquorice product sales are to the worldwide tobacco industry for use as tobacco flavour enhancing and moistening agents in the manufacture of American blend cigarettes, moist snuff, chewing tobacco, and pipe tobacco. American blend cigarettes made up a larger portion of worldwide tobacco consumption in earlier years, and the percentage of liquorice products used by the tobacco industry was higher in the past. M&F Worldwide sold approximately 73% of its liquorice products to the tobacco industry in 2005. A consultant to M&F Worldwide's predecessor company stated in 1975 that it was believed that well over 90% of the total production of liquorice extract and its derivatives found its way into tobacco products.

Liquorice provides tobacco products with a natural sweetness and a distinctive flavour that blends readily with the natural and imitation flavouring components employed in the tobacco industry. It represses harshness and is not detectable as liquorice by the consumer. Tobacco flavourings such as liquorice also make it easier to inhale the smoke by creating bronchodilators, which open up the lungs. Chewing tobacco requires substantially higher levels of liquorice extract as emphasis on the sweet flavour appears highly desirable.

Menthol 90 percent

L-menthol

Menthol is an organic compound made synthetically or obtained from corn mint, peppermint or other mint oils. It is a waxy, crystalline substance, clear or white in color, which is solid at room temperature and melts slightly above. The main form of menthol occurring in nature is **(−)-menthol**, which is assigned the (1*R*,2*S*,5*R*) configuration. Menthol has local anesthetic and counterirritant qualities, and it is widely used to relieve minor throat irritation. Menthol also acts as a weak kappa opioid receptor agonist.

Ingesting pure menthol can be poisonous, and overdose is also possible through excess consumption of menthol-containing products. The oral median lethal dose has been estimated at 192 mg/kg; other sources give much higher numbers like 2900 mg/kg. Not to be confused with methanol or methanal.

Menthol in cigarettes

Menthol is a controversial cigarette additive because its physiologic or pharmacologic effects may possibly increase the risk for cancer and its targeted market is the Black community. In a community-based cross-sectional study on 525 Black and White volunteers, we compared levels of urinary and plasma cotinine, plasma thiocyanate, urinary 4-(N-nitrosomethylamino)-1-(3-pyridyl)-1-butanol (NNAL), and its detoxified form (NNAL-Gluc) between menthol and nonmenthol smokers. In regression models that adjusted for daily cigarette

intake, no significant differences were observed in the concentration of these biomarkers by menthol status in both races. There was no significant association between high Fagerstrom nicotine dependence scores and the use of menthol cigarettes (odds ratio, 1.1; 95% confidence interval, 0.6-2.0), but an increased risk was observed with smoking a cigarette soon (≤30 minutes) after waking (odds ratio, 2.1; 95% confidence interval, 1.0-3.8). The ratio of NNAL-Gluc to NNAL, a possible indicator of lung cancer risk, was significantly lower in menthol versus nonmenthol smokers. The NNAL-Gluc/NNAL ratio was 34% lower in Whites ($P < 0.01$) and 22% lower in Blacks. In subsequent human liver microsome studies, menthol inhibited the rate of NNAL-*O*-glucuronidation and NNAL-*N*-glucuronidation. Collectively, these results show that menthol does not affect biological exposure to tobacco smoke constituents but indicates that menthol might inhibit the detoxification of the potent lung carcinogen NNAL. (Cancer Epidemiol Biomarkers Prev 2009;18(1):35–41)

Menthol and nicotine dependence in short

The association between high FTND scores and menthol was 1.1 [95% confidence interval (95% CI), 0.6-2.1;]. In multivariate analysis, younger age was the only significant predictor of high nicotine dependence scores. The association between smoking within the first 30 minutes after waking up and menthol was 2.1 (95% CI, 0.96-3.8). Race was not a significant predictor in these models. Menthol was not a significant predictor of daily cigarette amount or heavy smoking (odds ratio, 0.8; 95% CI, 0.5-1.4) after adjusting for race, sex, and other factors. In race-specific models, the inverse association of menthol with heavy smoking was slightly greater in Blacks (odds ratio, 0.702; 95% CI, 0.144-3.426) than in Whites (odds ratio, 0.855; 95% CI, 0.459-1.591).

The FTND and the time to first cigarette after waking were moderately correlated with levels of plasma cotinine ($r = 0.28$, $P < 0.01$; $r = 0.26$, $P < 0.01$), urinary cotinine-creatinine ($r = 0.27$, $P < 0.01$; $r = 0.26$, $P < 0.01$), and total NNAL ($r = 0.21$, $P = 0.08$; $r = 0.15$, $P = 0.23$).

When subjects were asked about their reasons for not quitting, the responses were similar between menthol and non-menthol smokers. Similar percentages reported that it was a nervous habit, they enjoyed smoking too much, the craving was too great, and fear of weight gain (data not shown). The only difference in reported reason for continued smoking was that more menthol smokers "never thought about quitting" than non-menthol smokers (17% versus 3.6%).

On cigarettes with menthol (not directly advisable)

The pooled odds ratio from four case-control studies of lung cancer associated with menthol versus non-menthol cigarettes was 0.93 (95% CI, 0.82-1.05). Menthol was not associated with an increased risk for other cancers. Menthol is

not pyrolized during tobacco combustion (and does not induce tumors in animals via i.p. injection or drinking water supplementation. Menthol may not be a direct carcinogen or cocarcinogen, but it causes several pharmacologic and physiologic effects that may affect cancer risk. Despite the lack of increased risk in the case-control studies, the effect size and statistical power to detect differences of one type of cigarette relative to another is likely to be small. However, even a small relative effect of menthol could cause substantial numbers of cancers because millions of Americans smoke menthol cigarettes.

Consequently, biomarker and mechanistic studies are seemingly important tools for indirectly assessing possible risks. One of the limitations of studying the effects of menthol has been separating its effects from race. Most Blacks who smoke prefer menthol, and studies on smoking topography or cotinine levels may have controlled for race but did not examine the race-specific effects of menthol. The current study examined the race-specific levels of several tobacco smoke biomarkers between menthol and nonmenthol smokers. We found no significant differences in mean cotinine and SCN levels.

A limitation of the study is that it included subjects who smoked at least five cigarettes per day. The mean cotinine levels were higher than that reported for National Health and Nutrition Examination Survey data, wherein about 25% of smokers reported smoking seven or fewer cigarettes daily. The current study therefore does not address possible differences in biomarker levels by menthol status among very light smokers. We observed no significant differences in the urinary levels of the lung carcinogen NNAL between menthol and non-menthol smokers in race-specific analyses, although the number of Blacks who smoked non-menthol cigarettes was relatively small and the differences in NNAL by menthol status was not significant. Assuming the same effect size and variances that were observed, the study would have required about six times the number of non-menthol Black smokers to detect significant differences. However, if the effect size is similar to that what was observed in Whites, much smaller numbers would be needed.

Menthol has been studied in relation to increased addiction to nicotine. In a 2-week randomized pharmacokinetic cross-over study on 14 smokers who switched from menthol to non-menthol or non-menthol to menthol, menthol was on average unrelated to blood levels of unlabelled nicotine. The effect of menthol on behavioral measures of nicotine dependence, such as the FTND, was negligible in adolescent smokers. The current study showed similar findings in adult smokers. It has been suggested that the amount of time between waking up and smoking the first cigarette is possibly a better measure of nicotine dependence than smoking amount or the FTND because it was shown to be a better predictor of plasma cotinine concentrations than daily smoking amount in

adults (39). However, in our data, the correlations of cotinine (plasma and urinary) were very similar between cigarettes per day, time since waking, and FTND. We did observe that menthol smokers were more likely to smoke cigarettes within 30 minutes after waking up than non-menthol smokers, which is similar to findings in the adolescent smoker study but differs from the Community Intervention Trial for Smoking Cessation, which found a longer time to first cigarette after waking for menthol smokers. The literature is inconsistent in this area and more studies might be helpful to understand this relationship. Menthol may inhibit quitting, although other large scale studies show similar quit rates between menthol and non-menthol smokers.

Another limitation is the interpretation of these analyses is that menthol content varies by cigarette brand, and younger smokers have been reported to smoke menthol brands with lower menthol content than older menthol smokers. In the present study, cigarettes were classified as menthol or non-menthol, and therefore, the magnitude of the effects (or lack thereof) associated with menthol reported here may not necessarily be generalizeable to all smokers.

We previously reported no racial differences in the ratio of NNAL-Gluc/NNAL levels in men, although in a subgroup of nine women who had a very high NNAL-Gluc/NNAL ratio (≥6), eight were White (29). We examined the cigarette brands of these women and found that only one subject was a menthol smoker, so it is possible that the racial differences in NNAL glucuronidation in women could be attributed to menthol.

In the current study, menthol smokers had lower urinary ratios of NNAL-Gluc/NNAL than nonmenthol smokers, and menthol inhibited the glucuronidation of NNAL-*N*-Gluc and NNAL-*O*-Gluc formation *in vitro*. These effects might be mediated by UGT2B10, which is the major enzyme involved in the *N*-glucuronidation of NNAL, and by UGT2B17 and UGT2B7, which are the major enzymes involved in NNAL-*O*-glucuronidation. Although UGT2B7 genotype was not associated with human liver microsomal glucuronidation activity against menthol, *in vitro* studies have shown that UGT2B7 is active against menthol and could be potentially inhibited by this substrate. The potential exists that menthol could therefore act as a substrate and inhibitor of other UDP-glucuronosyltransferases as well. Studies by Benowitz et al. have shown that menthol significantly inhibits nicotine-glucuronide formation *in vivo*. Because UGT2B10 is the major enzyme responsible for the *N*-glucuronidation of nicotine and NNAL, it is likely that UGT2B10 may be the target for the inhibitory effects of menthol on nicotine and NNAL glucuronidation activity *in vivo*. Studies examining the interaction between menthol and NNAL or nicotine glucuronidation in cells specifically overexpressing UDP-glucuronosyltransferases 2B7, 2B10, and 2B17 are currently planned. The major

limitation of *in vitro* studies that attempt to identify the underlying mechanisms in epidemiologic data is that it is difficult to mimic *in vivo* conditions experimentally. In particular, the human liver microsomes are not equivalent to endoplasmic reticulum in intact cells and do not interact similarly with other cellular components and vascular supply and nutrients. The levels of exposure in the *in vitro* model may not reflect *in vivo* exposure. Despite these limitations, cellular pathways are often activated similarly in *in vitro* and *in vivo* systems, and human liver microsomes are commonly used to screen for drug interactions in pharmacologic research.

In summary, these data indicate that menthol is not associated with a higher exposure to tobacco smoke carcinogens, but the findings on nicotine dependence are inconclusive. Menthol may not be more hazardous than other cigarette formulations for most smokers, although it cannot be ruled out at this time that some menthol smokers are possibly at increased risk for lung cancer because of selective inhibition of UDP-glucuronosyltransferase enzymes.

Propylene glucol

Propylene glycol (CH8O2) is a commonly used drug solubilizer in topical, oral, and injectable medications. It is used as stabilizer for vitamins, and as a water-miscible cosolvent.[1] Propylene glycol has been used for over 50 years in a large variety of applications. As a pharmaceutical additive, propylene glycol is generally regarded as safe. However, in the pediatric population, propylene glycol has been implicated in toxicity. Cases of hyperosmolality from absorption of creams applied to burns have been reported. Contact dermatitis has also occurred with topical application in the pediatric population. Hemolysis, central nervous system depression, hyperosmolality, and lactic acidosis have been reported after intravenous administration.[2] Propylene glycol is metabolized to lactic acid, which may lead to the reported lactic acidosis.

The high concentration of propylene glycol contained in certain intravenous drug products, such as phenytoin, diazepam, digoxin, and etomidate, may induce thrombophlebitis. Rapid infusion of solutions containing high concentrations of propylene glycol-containing drugs has been linked to respiratory depression, arrhythmias, hypotension, and seizures. Seizures and respiratory depression have also occurred in children who have ingested oral solutions containing propylene glycol.[2]

Propylene glycol is also used as moisturizer in cosmetic products and as a dispersant in fragrances. There are many other food and industrial uses for propylene glycol. As a food additive, propylene glycol is on the U.S. Food and Drug Administration (FDA) generally regarded as safe list (not to be confused

with ethylene glycol, which is extremely toxic if ingested). According the FDA, as a food additive, propylene glycol is metabolized in the body and is used as a normal carbohydrate source. Long-term use and substantial quantities of propylene glycol (up to five percent of the total food intake) can be consumed without causing toxicity. There is no evidence in the available information on propylene glycol that demonstrates, or suggests a hazard to the public when they are used at levels that are now current or might reasonably be expected in the future.[3][4]

[1] Dave RH. Overview of pharmaceutical excipients used in tablets and capsules. Drug Topics (online). Advanstar. 10/24/2008

http://drugtopics.modernmedicine.com/drugtopics/Top+News/Overview-of-pharmaceutical-excipients-used-in-tabl/ArticleStandard/Article/detail/561047. Accessed 08/19/2011

[2] 'Inactive" Ingredients in Pharmaceutical Products: Update. Committee on Drugs Pediatrics 1997;99;268

[3] FDA's SCOGS database; propylene glycol; SCOGS-Report Number: 27; http://www.fda.gov/Food/FoodIngredientsPackaging/GenerallyRecognizedasSafeGRAS/GRASSubstancesSCOGSDatabase/ucm261045.htm. Accessed March 17, 2012.

[4] Propylene glycol. FAQ. http://www.propylene-glycol.com/ Accessed March 17, 2012.

Natural News

Mention Propylene Glycol (PG) to most people and they will probably tell you that it is a toxin. On the other hand, PG comes in more than one formulation, so it needs to be clarified as to which formulation is meant.

The real question is, does it make a difference which one is used, since it is used in everything from hydraulic and brake fluid to snack foods?

The answer is: it does and it doesn't. It is a toxin regardless of which strength is used. Propylene Glycol is a form of mineral oil, an alcohol produced by fermentation of yeast and carbohydrates. This gives it the designation of carbohydrate when used in foods.

Because it comes in several grades, PG has been used for a variety of uses. Industrial grade PG is used as an active ingredient in engine coolants and antifreeze; airplane deicers; polyurethane cushions; paints, enamels and varnishes; and in many products as a solvent or surfactant. In all fairness, it should be stated that PG was only added to anti-freeze to replace *Ethylene*

Glycol. It had been a problem because dogs often lap up puddles of anti-freeze.

The form most pertinent to this article is the pharmaceutical grade. This is a much less concentrated form of PG and therefore less problematic. That being stated, it is also the controversial form due to its use in products that are either ingested or enter the body through application to the skin. It is commonly used as a solvent in oral, topical and injectable drug products as well as in foods.

Though the controversy over PG wages on, it is not for lack of research. In fact many studies have been conducted, but results have been contradictory. Possibly this is because the concentration of PG in the formulation studied is not always readily apparent. Regardless, the government agencies involved have deemed it safe: The FDA includes Pharmaceutical grade PG on its Generally Recognized As Safe (GRAS) list. The World Health Organization also considers it as safe for use.

Studies on dogs and rats, which were fed doses of PG ranging from two to five grams per kg of body weight per day, showed no links to cancer. The results satisfied the Cosmetic Ingredient Review Expert Panel enough to conclude that there was no carcinogenic risk with low levels of ingestion of PG. A low level of PG was defined, and as a result, the panel recommended that only PG with a concentration less than 50% should be used in cosmetics.

Though cancer might not be a concern, it was also found that PG provoked allergic reactions in patients with eczema and other skin allergies, even in formulations of much less than 50%.

The Material Safety Data Sheet (MSDS) cites skin, liver and kidney damage that can result from contact with PG, and it gives safe handling instructions, calling it a hazardous substance. Though not specified, this is for the more concentrated industrial grade.

On the other hand, studies done in vitro tests on mammalian cells revealed that some cells underwent mutation. Other research conducted twenty and thirty years ago documented toxic effects after repeated small doses of propylene glycol were ingested or repeatedly applied to the skin. Acute toxicity was found to follow I.V. injection of drugs dissolved in significant amounts of PG.

In Europe, where the authorities are much more cautious about what is allowable in cosmetics and foods, propylene glycol is limited to mostly non-food uses. What food uses are allowed are very limited.

The question comes down to more of a quantity issue. In small amounts, used infrequently, propylene glycol may not have negative health effects. If one wants to be on the safe side, though, there are alternatives.

Sucrose/invert sugar

Inverted or **invert sugar syrup** is a mixture of glucose and fructose; it is obtained by splitting sucrose into these two components. Compared with its precursor, sucrose, inverted sugar is sweeter and its products tend to retain moisture and are less prone to crystallization. Inverted sugar is therefore valued by bakers, who refer to the syrup as *invert syrup*. It is similar to high-fructose corn syrup.

In technical terms, sucrose is a disaccharide, which means that it is a molecule derived from two simple sugars (monosaccharides). In the case of sucrose, these monosaccharide building blocks are fructose and glucose. The splitting of sucrose is a hydrolysis reaction. The hydrolysis can be induced simply by heating an aqueous solution of sucrose but more commonly, catalysts are added to accelerate the conversion. The biological catalysts that are added are called sucrases (in animals) and invertases (in plants). Sucrases and invertases are types of glycoside hydrolase enzymes. Acid, such as lemon juice or cream of tartar, can also accelerate the conversion of sucrose to invert.

Tobacco

Tobacco is found in cigarettes which you smoke. It comes from the leaves of the tobacco plant and contains many different chemicals.

One of the chemicals is nicotine, which gives smokers their 'hit' but is also highly addictive. This means it can be hard to quit smoking even if you want to.

Tobacco is found in cigarettes which you smoke. It comes from the leaves of the tobacco plant and contains many different chemicals.

One of the chemicals is nicotine, which gives smokers their 'hit' but is also highly addictive. This means it can be hard to quit smoking even if you want to.

Regular smokers believe that smoking tobacco helps them to relax, to handle stress and to feel less hungry.

But smoking can make your clothes and breath smell and can affect your skin and hair.

It can also cause serious damage to your health – it’s a risk factor for emphysema, heart attacks, strokes and lung cancer. It's estimated that smoking tobacco contributes to 100,000 premature deaths in the UK every year.

It's illegal for shopkeepers to sell tobacco or tobacco products to anyone under 18. Cigarettes must be sold in their original packaging and it is illegal to sell single cigarettes to anyone, adult or child.

Regular smokers believe that smoking tobacco helps them to relax, to handle stress and to feel less hungry. However, tobacco smoke (tar) contains over 4,000 chemicals and many have effects on various parts of the human body, including the brain, lungs, heart and mouth. Most of the cancers associated with smoking are due to the tar in the smoke.

Smoking any drug gets it to the brain very quickly. When a tobacco smoker inhales it’s estimated that the nicotine in the tobacco smoke reaches the brain in around 8 seconds. This speed of action contributes to a user becoming hooked to the nicotine in tobacco.

The risks of tobacco

First time smokers often feel sick and dizzy.

Smoking tobacco has lots of immediate effects such as making your clothes and hair smell, to costing you lots of money. Smoking stops oxygen getting to the skin making you more prone to spots and a dull complexion. Over time it can lead to premature aging, meaning more wrinkles and a so-called ‘cats bum’ mouth. Smoking can also make hair less shiny and yellow nails and teeth.

Of the over 4,000 chemicals that tobacco contains many have harsh effects on the human body. Smoking can increase your blood pressure and the heart rate, which can damage the heart and circulation and contribute to heart attacks, strokes and cause cancer. Also:

- Smokers are more likely to get coughs and chest infections.
- Long-term use could leave you with cancer, emphysema or heart disease.
- Smoking when pregnant can harm the foetus and can even cause a miscarriage.
- It’s not uncommon for babies born to mothers who have smoked during pregnancy to have a lower than normal birth weight, which, some have linked to autism and sudden infant death syndrome.
- Smoking has been linked to the amputation of 2,000 limbs a year.
- It's estimated smoking contributes to 100,000 premature deaths in the UK every year.
- Other people breathing in your smoke could end up with breathing difficulties, asthma or even cancer.
- Smoking Shisha can be more dangerous than smoking a cigarettes, with users at increased risk of picking up diseases such as herpes or tuberculosis from sharing pipes.

Smoking Marlboro Red is hot

The **cult of Marlboro cigarettes among Gay people** continues to grow with years and today it has been able to reach the apex of the cigarette industry. Though glycol has been raising many voices as the worst ingredient in this cigarette brand, but it is only included in limited amount.

For decades the smoking hot Marlboro men symbolized rugged masculinity. They inspired countless fantasies among adolescent gay boys and we definitely used to have big crushes on these lonesome cowboys when we were kids. That is, until we learned they were trying to kill us.

In spite of the smoking effects!

Most people who smoke do so because they can't stop or they find no reason to stop just enjoying smoking. Nicotine is a highly addictive substance that makes people feel energized and alert. Smokers get a rush after a cigarette, and giving up produces withdrawal symptoms that include difficulty sleeping and cravings. Seventy percent of people who quit smoking eventually start again.

Tobacco advertising also has a big influence on why people smoke. For years, the industry has focused on making smoking glamorous through advertising in movies, television, and billboards. While cigarette advertising is now controlled, its influence can still be felt in the form of free samples, smoking cartoons, and the promise of cool merchandise that can be obtained in exchange for coupons printed on cigarette packs. Many people claim that smoking keeps them thin, but the truth is that smoking reduces the sense of taste, so many people who smoke simply eat less because they don't enjoy food as much.

Smoking also produces psychological dependency. Many people smoke because it helps them relax and cope with difficult situations, or because it gives them confidence. Others smoke when they feel bored. Smoking produces a feeling of satisfaction that's difficult to give up. Finally, people who smoke are usually in denial – they know that smoking is bad, but they convince themselves it's simply "not as terrible as they make it sound."

Smoking is a social activity as well. Many people who smoke do so as a way to start conversations and interact at parties or in crowded places. This is known as "social smoking," and it usually involves alcohol as a complement.

Many teenagers start smoking due to peer pressure. They may also smoke to feel more mature or as a form of rebellion against parental authority. It has been proved that children are also more likely to smoke if their parents do.

Sex the hard or the soft way, smoking, sniffing poppers and anything else at choice appearing to dominate us all in one way or another, underlying all that we are, that point which enthrall us through the power it manifests and the meaning it conceals, and which we ask to reveal what we are and to free us from what defines us – is doubtless but an ideal point made necessary by the deployment of sexuality and its operation. It is through these things that each individual in one way or another has to pass belonging to the sex life, in order to have access to his own intelligibility, sex being more important than our soul life. Sexuality is the secret of the Self, the Mind. Death is power’s limit, the

moment that escapes it, the most secret aspect of existence and also the most private.

What is the difference between the red, silver, gold and green Marlboro cigarettes?

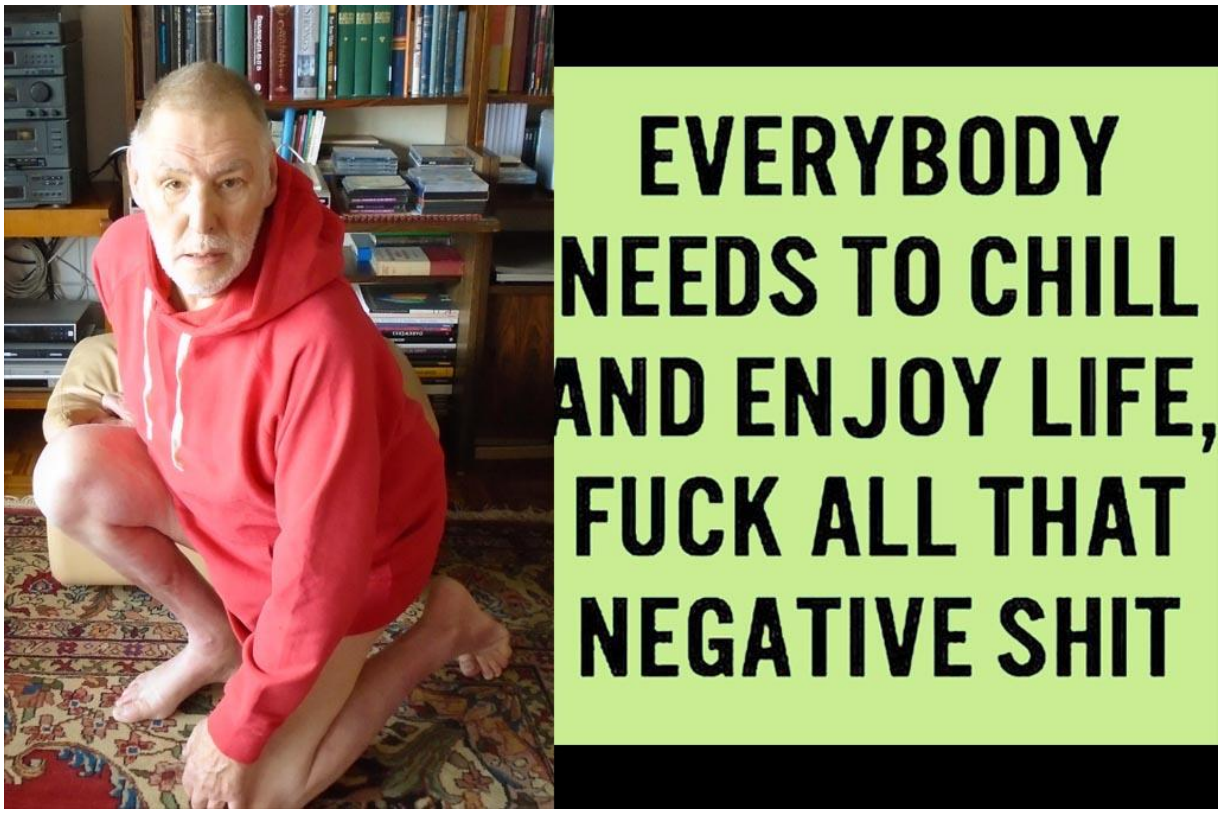
Marlboro Full Flavoured or Marlboro *Reds* are the original and are still the most recognisable Marlboro cigarettes. They are available in king size and in 100s (a slightly thinner, longer cigarette).

Marlboro Lights have the same tobacco blend as Marlboro Reds but with lesser tar and nicotine. They come in a white pack with a *Gold* Marlboro crest.

Marlboro developed an Ultra-Light brand as a response to growing health concerns. Just like the Marlboro Lights, it has the same blend of tobacco as the

Full Flavoured Marlboros but with less tar and nicotine content. Ultra Lights come in a white pack with a *Silver* Marlboro crest.

Cigarettes marketed in white packs with *Green* detailing are the menthol flavoured Marlboro cigarettes. They come in Full Flavoured and Light variations.



Contents